

ABSTRACT

A polymer electrolyte fuel cell is provided comprising: a hydrogen ion conductive polymer electrolyte membrane; an anode and a cathode sandwiching the hydrogen ion conductive polymer electrolyte membrane; an anode side electroconductive separator having a gas channel for supplying a fuel gas to the anode; a cathode side electroconductive separator having a gas channel for supplying an oxidant gas to the cathode; characterized in that the anode and the cathode comprise a gas diffusion layer and a catalyst layer formed on the gas diffusion layer at the side in contact with the hydrogen ion conductive polymer electrolyte membrane, the catalyst layer has catalyst particles and a hydrogen ion conductive polymer electrolyte, and at least either of hydrogen ion conductivity and gas permeability of at least either of the anode and the cathode varies in a thickness direction of the anode or the cathode.

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